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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,917	07/23/2003	Shahram Mostafazadeh	NSC1P194D1/P04836D1	9491
22434	7590	02/25/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			ROSE, KIESHA L	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-1A

<b>Office Action Summary</b>	<b>Application No.</b> 10/625,917	<b>Applicant(s)</b> MOSTAFAZADEH, SHAHRAM	
	<b>Examiner</b> Kiesha L. Rose	<b>Art Unit</b> 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

This Office Action is in response to the amendment filed 22 November 2004.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 11-12 and 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuji et al. (U.S. Patent 6,255,740).

Tsuji discloses a semiconductor device (Fig. 21c) that contains a first die (41) with a conductive side, a plurality of lead posts (28a) wherein the conductive side of the first die faces the plurality of lead posts and are mechanically and electrically connected to the lead posts with epoxy to a plurality of conductive pads (62), each of the lead posts positioned on a plurality of lead fingers (63) respectively, each of the plurality of lead fingers electrically isolated from the one another, an encapsulating material (23a/51a) encapsulating the first die, lead posts and formed between the plurality of lead fingers to electrically isolate the lead fingers from each other, the lead posts have equal spacing and pitch and have a square cross section or round cross section (Figs.

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19b and 27b) and have lengths that are substantially perpendicular to the conductive side of the die and an oversized contact pad (71) on the bottom surface of the integrated circuit outside the encapsulant and has a diameter larger than the diameter of the lead post. (Fig. 23) The die can be directly connected to the lead posts. (Fig. 40c)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji in view of Wang (U.S. Patent 6,258,626).

Shinohara discloses all the limitations except for a second die connected to the first die. Whereas Wang discloses a semiconductor package (Fig. 1) that contains a first die (110) with a conductive side, a second die (130) with a conductive side and a side opposite the conductive side of the first die wherein the side opposite the conductive side connected to a side opposite the conductive side of the first die, lead posts (112/124) a wirebonding (132) connected between the conductive side of the second die and at least one of the lead posts, and encapsulate (140) encapsulating the first and second die, lead post and wirebonding. A second die is connected to the first die for flip chip connection. (Column 1, lines 12-14) Therefore it would be obvious to one

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of ordinary skill in the art at the time the invention was made to modify the device of Shinohara by incorporating a second die connected to the first die for flip chip connection as taught by Wang.

Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 5,830,800).

Lin discloses a ball grid array (Figs. 1d-f) that contains a lead frame (10) having a first surface and a substantially planar second surface, a set of posts (30) formed on the first surface of the lead frame, the plurality of post organized into a plurality of subsets of posts, a plurality of semiconductor die (40) each mounted onto the plurality of subsets of posts with epoxy to the conductive pads and an encapsulant (50) encapsulating the lead frame including plurality of semiconductor die and subsets of posts, the substantially planar second surface of the lead frame acting to prevent the encapsulate from forming on the second surface of the lead frame where a space is formed between the plurality of die for singulate the individual semiconductor die from the lead frame using a cutting tool. In reference to the encapsulation being continuous that is an intermediate process since the final process is singulating the lead frame which makes each die individually encapsulated and the Lin reference would be continuously encapsulated. Therefore that limitation is not distinguishable over the art because it is an intermediate process not the final product, which is separate dies.

***Response to Arguments***

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KLR

  
**AMIR ZARABIAN**  
**SUPERVISORY PATENT EXAMINER**  
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